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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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DOGM
MINERALS PROGRAM
FILE COPY

November 13, 1989

TO: Board of Oil, Gas and Mining

THRU: Lowell P. Braxton, Associate Director, Mining *LPB*

FROM: Holland Shepherd, Reclamation Specialist/Permit Lead *HWS*

RE: Form and Amount of Surety Proposal, Cane Creek Mine, Moab Salt, Incorporated, M/019/005, Grand County, Utah

The operator is proposing a new self bond with a value of \$10,700,000. The new proposal includes a ten year renewal period and a yearly, certified audited review of the operator's financial status. The operator has edited the Division's Reclamation Contract and Self-Bonding form. The Division and operator are currently negotiating on the language, for these forms. The forms will be made available to the Board before the next briefing.

Please find attached the following background information:

1. Summary Checklist;
2. Location Map;
3. New Reclamation Surety Estimate;
4. Executive Summary;

Copies of the Reclamation Contract, Self Bonding Agreement and Self Bonding Qualification Statement are not available at this time, but will be made available by the time of the Board briefing.

jb
Attachments
MN4/173

DOGM MINERALS PROGRAM

CHECK LIST FOR BOARD APPROVAL
OF
FORM AND AMOUNT OF SURETY

Mine Name Cane Creek-Moab Salt Inc.

File No. M/019/005

Item	Provided		Remarks
	Yes	No	
Executive Summary	X		
Location Map	X		
Reclamation Bond Estimate	X		This amount has been changed from 9.7 million to 10.7 million to accommodate a ten year bonding period.
Signed Reclamation Contract		X	This form to be made available by the November 1989 Board briefing.
Signed Power of Attorney/ Affidavit of Qualification		X	This form to be made available by the November 1989 Board briefing.
Bond/Reclamation Surety		X	This form to be made available by the November 1989 Board briefing.
Surety Signoff (Other State/Federal Agencies)		X	N/A - The majority of property is on fee land.

EXECUTIVE SUMMARY

Mine Name:	<u>Cane Creek Mine</u>	I.D. No.:	<u>M/019/005</u>
Operator:	<u>Moab Salt Incorporated</u>	County:	<u>Grand</u>
	<u>P. O. Box 1208</u>	New/Existing:	<u>Existing</u>
	<u>Moab, Utah 84532</u>	Mineral Ownership:	<u>Federal and State</u>
Telephone:	<u>801-259-7171</u>	Surface Ownership:	<u>2% BLM</u>
Contact Person:	<u>Eric K. York</u>	Lease No.(s):	<u>See Attached</u>
Life of Mine:	<u>100 years</u>	Permit Term:	<u>Life of Mine</u>

Legal Description: T26S, R20E, Secs. 22-36; T27S, R20E, Secs. 1, 2, 11, & 12

Mineral(s) to be Mined: Potash and Salt (Sodium Chloride)

Mining Methods: Solution Mining

Acres to be Disturbed: 1.002.1

Present Land Use: All Mining

Postmining Land Use: Rangeland, wildlife, recreational, oil & gas exploration

Variances from Reclamation Standards (Rule R613-004) Granted: (107) Drainages

SOILS and GEOLOGY:

Soil Description: Desert sandy looms, undeveloped lacking in organic and nutrient content.

pH: 8.4

Special Handling Problems: Extensive leaching at final reclamation to remove salt.

Geology Description: The operation lies within the 15,000 square mile Paradox Geologic Basin. The basin is underlain by the Pennsylvanian Paradox evaporites which consist mostly of sodium chloride and subsidiary beds of potassium chloride, gypsum, limestones, shales and clastics. The mine is located in rugged terrain, bisected by steep canyons at the floor of a 2,000 foot deep amphitheater adjacent to the Colorado River, directly under Dead Horse Point State Park. The surface portions of the mine lie within the Cutler and Upper Elephant Canyon Formations.

HYDROLOGY:

Groundwater Description: The amphitheater containing the Moab Salt brine exhibits very little discharge of natural ground water. The amphitheater has eroded northwest along the crest of the Cane Creek anticline, exposing the rocks comprising its walls at their highest topographic position in the area. The presence of the amphitheater and numerous nearby deep canyons has imposed an unsaturated environment on the exposed rocks by keeping the rocks well drained. All of the Permian and non-salt Pennsylvanian rocks lying below the level of the Colorado River, in the vicinity of the mine, are saturated. The solution mine lies in the unsaturated Paradox formation some 1500 to 3500 feet below the Colorado River.

Surface Water Description: No perennial water ways are found on the minesite. However, the surface disturbance does lie directly adjacent to the Colorado River. The site is bisected by several ephemeral streams which feed into deep canyons. Some of these streams have become artificially perennial as a result of brine leakage from the operation's evaporation ponds. The site, for the most part, is dry, other than the man-made effluents and a few natural seeps found in the area.

Water Monitoring Plan: None

ECOLOGY:

Vegetation Type(s); Dominant Species: Rabbitbrush, Mormon Tea, Sagebrush, Snakeweed, Horsebrush, Sand dropseed, Cheatgrass, Saltgrass, Galleta grass, Globemallow, Prickly Pear.

Percent Surrounding Vegetative Cover: 20%

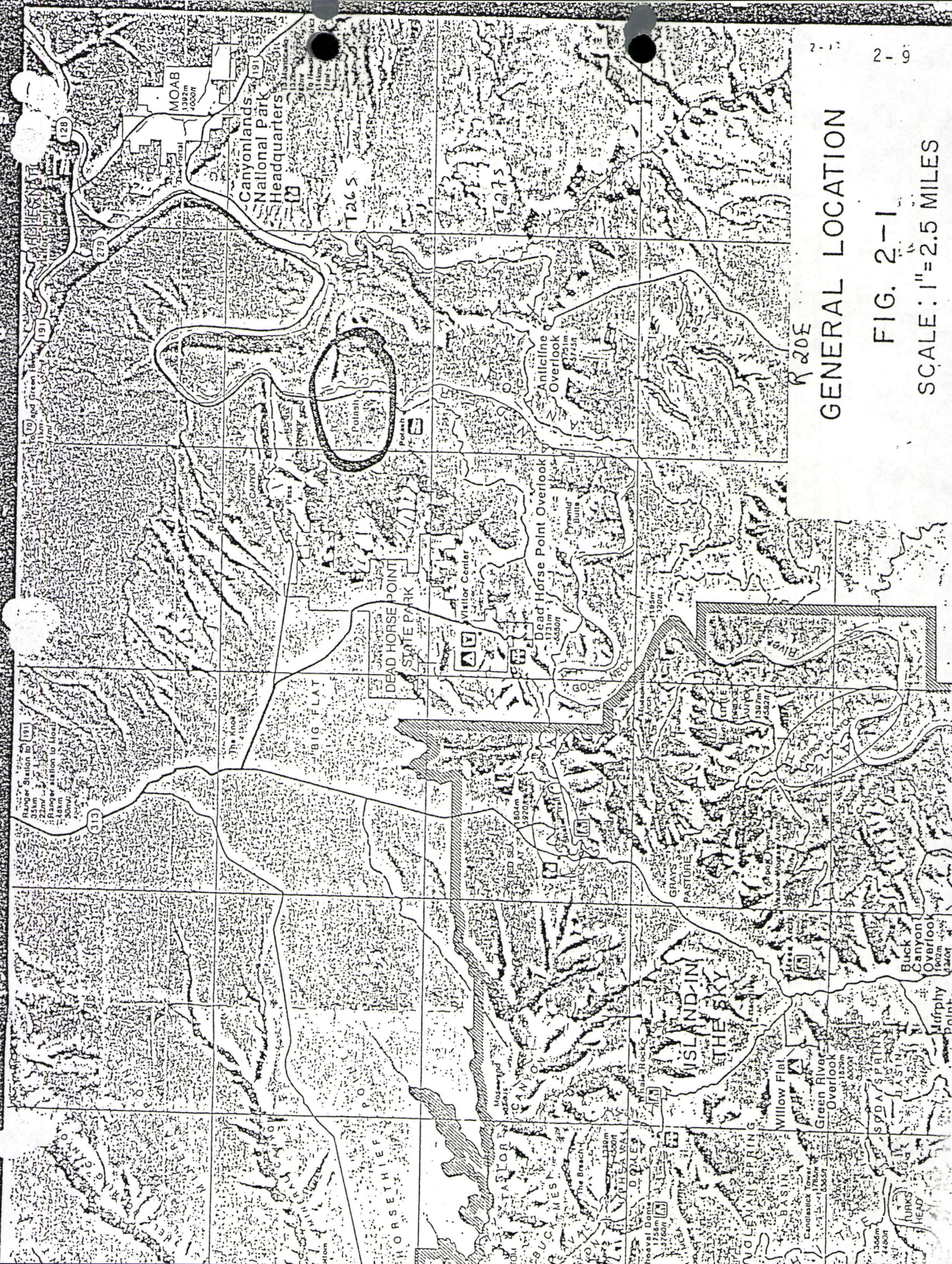
Wildlife Concerns: No major impacts.

Surface Facilities: Extensive warehouse and processing facilities, concrete, headframe, numerous service buildings, office complex, rail facilities, all found within the 100 acre plant site area.

Mining and Reclamation Plan Summary: The operator intends to reclaim this area as near original condition as possible. The mines surface facilities will be removed and disturbed areas regraded. All salt contaminated areas will be cleaned up and revegetated.

SURETY:

Amount: \$10,700,000
Form: Self Bond
Renewable Term: No term negotiated



RECLAMATION PLAN TOTAL COST ESTIMATES
November 10, 1989

Reclamation Cost Subtotal - Table 14-3		\$4,490,000
Equipment Removal Subtotal - Table 14-1		\$171,000
Structure Demolition Subtotal - Table 14-1		\$433,000
Earth Moving Subtotal - Table 14-2		\$2,915,000
1989 Dollars	Total Cost	\$8,009,000
10% Contingency		\$801,000
*1999 Dollars (1.93% Inflation)		\$10,700,000

*Based upon initial 10 year renewal period

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